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March 16, 2009

Re: Docket No. 2008-0273; In the Matter of Public Utilities Commission Instituting a Proceeding to Investigate the Implementation of Feed-in Tariffs

To: Service List

Enclosed please find additional information requests ("IRs") prepared by the Commission's consultant, the National Regulatory Research Institute, for the above-referenced docket. In preparation for the upcoming panel hearings scheduled for April 13, 2009, the applicable parties are directed to respond to the IRs within fourteen days of the date of this letter.

Please contact the undersigned if you have any questions.

Sincerely,

*Kamalani Kioiam Shumato*

*for*

Stacey Kawasaki Djou  
Commission Counsel

SKD:KKS:laa

Enclosure

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## **Information Requests Second Set**

These information requests elicit information to inform NRRI's FiT recommendations. Responses to these questions will also help NRRI focus the FiT hearing and ensure that questions to parties are on point and that parties are prepared to provide substantive responses. Responses will inform NRRI's analysis of (1) the appropriate scope of the FiT in terms of eligible technologies and project sizes, (2) optimal initial prices, (3) treatment of technologies that do and do not provide system reliability benefits, and (4) the interaction between the FiT and other methods to incorporate renewable energy projects. This set of information requests primarily responds to suggestions and proposals in the parties' opening statements.

### **I. IRs to the HECO Companies<sup>1</sup> and the Consumer Advocate**

#### **A. Procurement techniques**

According to Page 4 of the Department of Business, Economic Development, and Tourism's Opening Statement:

"More importantly, the current bid process only applies to renewable resources with capacity of at least 5 MW (2.72 MW for MECO and HELCO), and there are no clear procurement rules required under the utility's current competitive bidding framework for the smaller renewable generators that are below this threshold size. Furthermore, the utility procurement of renewable generation that meets the capacity size thresholds without a utility-issued RFP will require a PUC-approved waiver from the competitive bidding framework, for which only the utility can apply or petition."

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<sup>1</sup>The term "HECO Companies" refers to Hawaiian Electric Company, Inc., Hawaii Electric Light Company, Inc. and Maui Electric Company, Limited.



1. **Is this a reasonable assessment of HECO's procedures? If not, please explain why it is not.**
2. **What are the procurement rules and procedures for renewable energy projects that are not eligible for net metering but below 5 MW for HECO (and lower for MECO and HELCO)?**
3. **What was the total amount of capacity of renewables integrated into the HECO Companies' transmission system during 2006, 2007, and 2008 using each of the following: competitive bidding, negotiated power purchase agreements, and net metering? Please list such capacity additions for each island and for each renewable technology.**
4. **Please list all renewables projects that are planned or under construction in Hawaii and have been awarded contracts by the HECO Companies through either competitive or negotiated power purchase agreements. For each project, list if the project used competitive bidding or a negotiated power purchase agreement, the size in kW, the technology and the location**

**B. Rule 14**

According to Page 5 of the Solar Alliance's Opening Statement:

"Specifically, SA has concerns about Rule 14, Appendix 1, Section 2. General Interconnection Guidelines d. Utility Feeder Penetration. This section has a ten percent feeder penetration which is inconsistent with the Hawaii Clean Energy Agreement. SA proposes that the language in this section of Rule 14 be modified to incorporate the 15%, 12 kVa circuit level prior to any study being required. Also, the information provided by the "Location Value Maps"

1. **Please describe the basis for the current 10% feeder penetration restriction.**
2. **What might the reliability consequences be of increasing the feeder penetration limit to 15% for Rule 14, Appendix 1, Section 2?**

According to Page 5 of the Solar Alliance's Opening Statement:

"SA also has concerns about Rule 14, Section 3 Design Requirements, f. Supervisory control. This section states that the utility can require computerized remote control for any generating facilities with an aggregate capacity of more than 1 MW. This requirement creates a "system size benchmark" which third party investors may not want to exceed, fearing additional costs, studies, remote curtailment. Thus they would only put in systems up to 1 MW even if they could use 1.5 MW to offset the customer load."

3. Please describe the basis for the current remote control requirement for systems of more than 1 MW.
4. What might the reliability consequences be of removing the remote control stipulation of Rule 14, Section 3 Design Requirements, f. Supervisory control?

**C. Interconnection process**

According to Page 6 of the HECO Companies and the Consumer Advocate's FiT proposal:

"For example, larger, 'central station' generating resources must go through a complex interconnection requirements study ("IRS"). Even 'distributed generation' resources interconnecting into distribution circuits may trigger the need for more extensive studies and interconnection requirements."

1. Please describe the additional components of the IRS compared to the process used for smaller generators.
2. How much longer does the IRS process take than the process used for smaller generators?
3. What size or types of projects typically go through the IRS process? Please describe any capacity cut-offs used to determine when this method is applied.
4. Does HECO's current queuing and interconnection process allow the "fast-tracking" of smaller systems or must they wait for the interconnection studies of large systems to be completed? If not, please explain why such a system would or would not be possible.

**D. HECO FiT consequences and administrative costs**

1. With respect to HECO's request for 10% of the value of FiT purchases to be placed in rate base, please quantify the debt-imputation challenge that purchasing power under an FiT versus other purchased power agreements creates.
2. Please list any instances where a public utility commission denied the recovery of a power purchase where the rate had been pre-established through a tariff or where the purchase had been pre-approved as just and reasonable by the regulator.

According to Page 31 of the KEMA attachment to the HECO Companies and Consumer Advocate's FiT Proposal:

“Administrative resource requirements. Deploying the FIT will require the HECO Companies to process FIT applications, conduct Rule 14.H interconnection reviews, and otherwise administer the tariff. The annual FIT quantity target will aid in managing these administrative resource requirements.”

- 3. Please estimate the annual administrative cost to the HECO Companies for each of the cost components described above if their FiT Proposal is adopted.**
- 4. If larger systems than those proposed in the HECO Companies' FiT proposal were eligible or cumulative annual caps were high, please describe how the administrative costs would change.**



**E. Other**

- 1. On page 10 of the HECO Companies and the Consumer Advocate's Joint Proposal, the HECO Companies supported the use of annual FiT targets. Should these targets be calculated for each technology or island, or be based on other factors?**
- 2. Should renewable energy annual aggregate caps or caps for the size of individual projects apply to renewable energy technologies that provide system benefits?**
- 3. What would be the reliability impact of the FiT featuring higher system size eligibility limitations for generators that provide system reliability benefits, such as hydro and biomass generators? Please describe any compelling reliability and system integration reasons why non-intermittent renewable energy systems should not feature higher eligibility caps than intermittent systems.**
- 4. Do the HECO Companies support paying FiT rates for the renewable energy production component of hybrid facilities that use a combination of renewable energy and fossil fuel? Please explain why or why not.**
- 5. Are renewable generators currently compensated in any manner for curtailments? If so, please describe any compensation mechanisms.**
- 6. Do the HECO Companies support the ability of utility affiliates to apply for FiT treatment? Restated, should any projects owned by HECO or its affiliates be eligible for the FiT? If they should be eligible, please explain how any conflicts of interests or unfair treatment of utility affiliate projects could be avoided.**

**II. IRs to the Solar Alliance and the Hawaii Solar Energy Association**

According to Page 5 of the Solar Alliance's Opening Statement:

"Specifically, SA has concerns about Rule 14, Appendix 1, Section 2. General Interconnection Guidelines d. Utility Feeder Penetration. This section has a ten percent feeder penetration which is inconsistent with the Hawaii Clean Energy Agreement. SA proposes that the language in this section of Rule 14 be modified to incorporate the 15%, 12 kVa circuit level prior to any study being required. Also, the information provided by the "Location Value Maps"

1. **Why is 15% the appropriate feeder penetration limit? Please provide all supporting documentation and calculations.**
2. **Is 0.77 an accurate DC to AC derate factor for solar PV technology in Hawaii? If not, what is the appropriate derate factor?**
3. **What is the degradation factor for solar PV systems in Hawaii? Please provide the basis for this estimate.**

### **III. IRs to the City and County of Honolulu**

According to Page 2 of the City and County of Honolulu's Opening Statement:

"The Joint Proposal filed by HECO and the Consumer Advocate contemplates a project-based feed-in tariff ("PBFiT") limited initially to four technologies, with low caps and a focus on interconnection at the distribution level. As such, does not appear to fit well with any near term plans of the City to expand its generating capacity. It seems unlikely that the City would submit any project under a PBFiT in the form presently proposed by HECO and the Consumer Advocate."

1. **Please describe the near-term plans of the City and County of Honolulu to expand its generation capacity.**
2. **Please describe, in general or specific terms, the projects that the City is contemplating supporting or those that it would under a more expansive FiT.**

According to Page 2 of the City and County of Honolulu's Opening Statement:

"It is the City's position that biomass and biogas technologies should be included in initial round of the PBFiT. There has been Hawaii experience with biomass projects and there are potential biomass and biogas projects close to being ready for development. Further, these technologies offer firm, dispatchable energy and pose fewer difficulties for integration into the HECO grid."

3. **Please describe the size, number and locations of potential biomass projects that could be developed on Oahu if supported by a FiT. Are any such facilities currently being developed on Oahu?**

According to Page 2 of the City and County of Honolulu's Opening Statement:

"At some point, the Commission will need to clarify the eligibility of municipal solid waste technology for the PBFiT. It is a form of biomass technology as currently defined under Hawaii's RPS standards. Despite that, it is not covered initially by the Joint Proposal, nor does it appear that alternative proposals will necessarily cover this technology."



4. **Please describe the current use of municipal solid waste technology for the generation of renewable energy in the City and County of Honolulu.**
5. **Please describe what kind of potential municipal solid waste projects could be developed on Oahu if supported by a FiT.**

#### **IV. IRs to Sopogy**

With respect to the Schedule FiT, Sopogy wrote on Page 2 of its Opening Statement that it supports:

“Changes to the rate tables for Concentrating Solar Power Facilities. The rates have been modified to reflect parity with Photovoltaic Generating Facility rates. Sopogy supports either a fixed feed-in tariff rate as listed in the attached document, or a starting feed-in tariff rate with a fixed annual escalator. In either case, Sopogy requests that the rates for solar technologies - both PV and CSP - be equivalent for each island and across the relevant project size ranges so as to establish a level playing field amongst the solar technologies within the Hawaii market.”

1. **Does Sopogy contend that the levelized cost for PV and concentrated solar thermal systems are the same? If so, please provide documentation, calculations, government reports and other evidence demonstrating this.**
2. **Are any of Sopogy’s solar systems curtailable by the utility? If so, please describe the minimum size of curtailable solar systems.**
3. **Please describe the annual degradation factor that your company estimates for concentrated solar technology. What is the basis for this degradation factor?**

#### **V. IRs to Zero Emissions Leasing**

On Page 8 of its opening statement, Zero Emissions Leasing wrote:

“The commission should not impose any caps on the total amount of renewable electricity purchased by the utility through a feed-in tariff, except that:

(1) purchase of renewable electricity generated from wind should be limited to purchases of electricity from wind generating facilities (onshore and offshore) having aggregate island-wide capacity that is no more than 25% of peak demand for such island,” and



(2) purchase of renewable electricity generated from solar radiation should be limited to purchases of electricity from photovoltaic and concentrating solar power facilities having aggregate island-wide capacity that is no more than 50% of peak demand for such island."

1. **Though their generation profiles differ, both wind and solar resources are intermittent and may cause system reliability problems at high penetrations. Would the cumulative amount of one of these technologies affect the amount of the other that can be reliably integrated?**
2. **Should any system caps for solar and wind be cumulative or independent of each other?**
3. **Please describe the annual degradation factor that your company estimates for solar PV technology. What is the basis for this degradation factor?**
4. **Is 0.77 an accurate DC to AC derate factor for solar PV technology in Hawaii? If not, what is the appropriate derate factor?**
5. **What is the degradation factor for solar PV systems in Hawaii? Please provide the basis for this estimate.**

## **VI. IRs to Tawhiri Power and First Wind Hawaii**

1. **Please describe the MWhs of utility curtailment for each of your wind projects during 2006, 2007 and 2008.**
2. **Please describe the level of utility curtailment that you anticipated when developing your wind projects.**

## **VII. IRs to Blue Planet Foundation and others parties contributing to the Schedule FiT**

- 1. Please provide all documentation, calculations, and other analysis supporting the specific rates proposed on pages 4-9 of the Schedule FiT attached to Blue Planet's Opening Statement.**
- 2. To the extent that the specific rates proposed on pages 4-9 of the Schedule FiT attached to Blue Planet's Opening Statement are based on feed-in tariffs in other places, please describe:**
  - a. Which FiTs are being utilized for each of the proposed FiT rates.**
  - b. Whether the proposed FiTs are the same as those elsewhere, save use of dollars instead of Euros. Please provide the exchange rate used to make such calculations.**
  - c. The basis for any non-exchange rate adjustments from the FiT rates elsewhere.**

According to pages 10 and 11 of the Schedule FiT attached to the opening statement:

"Requests for interconnection of Renewable Energy Generating Facilities under this Schedule shall be administered on a first-ready, first-to-interconnect basis, modeled after the queuing procedures proposed by the Midwest Independent Transmission System Operator, Inc. ("Midwest ISO") and conditionally accepted by the Federal Energy Regulatory Commission. See 124 FERCTI 61,183, Midwest Independent Transmission System Operator, Inc., docket No. ER08-1169-000, Order Conditionally Accepting Tariff Revisions and Addressing Queue Reform, August 25, 2008."

- 3. Please explain why the queuing procedures in Midwest ISO are preferable to those of other transmission organizations. Please list the essential elements of the Midwest ISO queuing procedures that you support Hawaii adopting.**

According to page 10 of the Schedule FiT attached to Blue Planet Foundation's Opening Statement, you support the term for FiT agreements to be 20 years for all eligible renewable energy technology.

- 4. Why is 20 years the appropriate time period for FiT agreements? Provide all underlying calculations, workpapers, reports or other information supporting FiT agreements lasting 20 years.**